The Journal

of the

AMERICAN LEATHER CHEMISTS ASSOCIATION

VOLUME LX

1965

Published Monthly By

THE AMERICAN LEATHER CHEMISTS ASSOCIATION

EASTON PRINTING COMPANY, PRINTERS

EASTON, PA.

INDEX
TO
VOLUME LX, 1965

AUTHOR INDEX

(A) indicates abstract; (P), patent; (R), review; and (TN), Technical Notes

ADLER, I. B. Proteins (P) 144
AFONCHENKO, A. A. *See* POLYANINOVA, N. I.
AIROLDI, R. Recent Methods of Tanning and the Character of Leathers Obtained (A) 255
ALBURN, H. *See* GRANT, N.
ALEATYRTSEVA, I. N., METRIK, G. L. and L. V. STRELKOVA. Determination of Dyestuff Absorption by Leather (A) 330
ALEXA, G., A. CHIRITA, and G. CHIRITA. Indigenous Vegetable Tanning Material: Willow Bark and Its Extract (A) 90
ANANTHARAYANAN, S., D. RAMASWAMY, and Y. NAYUDAMMA. Studies on Differently Held Sulfato Groups in Chrome-Tanned Protein (A) 42
———, ———, and ———. New Method for the Determination of Protein-bound Acids in Chrome Leather (A) 332
ARTANDI, C. Preparation of Collagen Sponge (P) 563
AUERBACH, E. A. *See* GIFFEE, J. W.
AZUMI, T. *See* OKAMOTO, K.

BABICH, I. Y., L. G. VOLOSHINA, and S. B. NOVAK. Rapid Method for Determining Tannin in Extracts, Syntans, Liquors (A) 86
BACHMAN, C. H., and E. H. ELLIS. Fluorescence of Bone (A) 698
BADRAN, A. M., and D. E. JONES. Polyethylene Glycols — Tannin Interaction in Extracting Enzymes (A) 689
BAKERMAN, S. Beta-Components in Collagen (A) 94
———. Alteration of the Distribution of the Alpha and Beta Components in Human Skin Collagen with Disease (A) 688
BALFE, M. British Leather Manufacturers' Research Association Lecture, May 12–14, 1964 (A) 91
BANERJEE, S. and S. RAJADURAI. Biosynthesis of Tannins in Indigenous Plants. XI. Occurrence of (-)-Leucopelargonidin in *Cassia marginata* (A) 43

BANGARUSWAMY, S. and R. SELVARANGAN. Newer and Simpler Method for the Analysis of Leather Boards (A) 467
——— and ———. Tannin Utilization — Wild Pomegranate (A) 468
BARAT, S. K. *See* KRISHNAN, D. R.
BARBIROLI, G. Quantitative Determination of Amino Acids by Circular Chromatography on Paper (A) 253
BARTOS, F. Histotopochemistry of Ascorbic Acid in Tendon Fibers (A) 466
BASU, B. C. *See* KEDLAYA, K. J.
BECHARD, E. Purification of Tannery Waste Waters (A) 689
———. Depollution of Tannery Waste Waters (A) 698
BECKER, R. O. and F. M. BROWN. Photoelectric Effects in Human Bone (A) 699
BELISARIO, T. M. and A. S. JAHN. Manual Apparatus for Separation of Solubilized Collagen from Dried Skin and Hide (TN) 393
BELL, E. *See* MALT, R.
BENNETT-CORNIEA, W. *See* GARRISON, W.
BEZZI, S. *See* GALIAZZO, G.
BHATTACHARYA, P. K., D. MUKHERGEE, and K. S. SARKAR. Manufacture of Chrome Retan Leather (A) 43
BIANUCCI, G. and G. DE STEFANI. Problems in Tannery Waste Purification (A) 137
BITCOVER, E. H. and E. F. MELLON. Distribution of Lipid Classes with Respect to Area and Stratigraphic Location in a Steerhide (A) 293
BLANCHER, J. and Y. EFFRONT. Enzymatic Unhairing of Skins for Glove Leather (A) 92
BLAZEK, A. *See* SVANCER, J.
BLAZEK, L. and O. HVEZDA. Modified Casein and Its Use in Tanneries (A) 260
———. Manufacture of Modified Casein for BH Base Coat (A) 260
BLOOM, F. W. *See* PALM, W. E.
BOCCIARDO, P. Drying Tanned Skins (P) 646
BOKSERMAN, E. I. and V. P. CHIZHMAKOVA. Trilonometric Iron Determination in Vegetable Tanning Extracts and Syntans (A) 262
BOLZ, W. Leather Damages by X-Rays with Special Consideration of Grain Structure (A) 45
——— and G. KONIGFELD. The Influence of X-Rays on Leather Quality (A) 394
BONAR, L. *See* LEVINE, P.
BORASKY, R. and C. SHIMONY. Collagen Fibril Structure as Deduced from Electronoscopic Data 148
BOSE, S. M. *See* DHAR, S. C.
——— .*See* NATARAJAN, M.

Bourgeat, P. *See* Desjours, G., Vernet, F.
Bowes, J. H., C. W. Cater, and M. J. Ellis. Determination of Formaldehyde and Glutaraldehyde Bound to Collagen by Carbon-14 Assay 275
——— and ———. Action of Perspiration on Leather. III. A Laboratory Test for the Assessment of Relative Stability of Leathers to Perspiration (A) 700
Boyd, J. N. *See* Fein, M. L.
Braunschweig, T. D. Studies on Tannery Sewage (TN) 125
Bravo, G. A. History of Leather and Art of Tanning (R) 145
Bresler, S. M. *and* A. N. Mikhailov. Influence of Temperature during Tanning on Stability of Chromium-Collagen Complex during Washing (A) 195
———. *See* Heidemann, E.
Broadhead, R. L. Method of Polishing Leather (P) 642
Brown, F. M. *See* Becker, R. O.
Buechler, P. R. *See* Lowell, J. A.
Buse, M., D. Jones, and W. Worthington. Uptake of Insulin Labelled with Iodine-131 by Elastic Tissue in Vitro (A) 634

Calhoun, R. R., Jr. *See* Fein, M. L.
Campbell, J. N. *See* Giffee, J. W.
Candlish, J. and G. Tristram. Salts and Amino Acids as Stabilizing Agents for Reconstituted Collagen Fibers (A) 459
Cares, C. J. *See* Hetzel, L. V.
Carrillo, A. *See* Kiez, K.
Carter, A. R. *See* Pettit, D.
Carter, T. J. Comparisons of Tearing-Strength Tests for Leather 4
Cater, C. W. *See* Bowes, J. H.
Chain, J. T. Some Advantages of Alum in Tanning Chemicals (TN) 681
Chand, K. *See* Humphreys, G. H. W.
Chirita, A. *See* Alexa, G.
Christyakova, N. V. and V. I. Zhukov. M Kh-30-1 Dispersion for Finishing Split Grain Pig Leather (A) 328
Chizhmakova, V. P. *See* Bokserman, E. I.
Chu, C. *See* Yun-Ti, C.
Ciferri, A. Alpha-Beta Transformation in Keratin (A) 137
Clarke, R. *See* Rogers, G.
Claycomb, C. K. *See* Summers, G. W.
Closson, W. Jr. Partially Vulcanized Upper Stiffening Blank (P) 564
Cole, R. L. *See* Donovan, R. G.
Consolazio, G. A. and R. E. Moses. Fining of Gelatin Solutions with Phosphates (P) 141

COOPER, D. R. and A. C. GALLOWAY. Curing Methods for Wet Salted Hides. Part I. Hide and Leather Quality from Different Curing Methods. 350
COWARD, M. and H. NURSTEN. Thermodynamics of Leather Dyeing. I. Dyeing of Hide Powder with Simple Acids (A) 137
CRONIN, F. P. Rapid Sole Leather Tannage (TN) 450

DAMMICCI, J. *See* MILLSON, H. E.
DAVID, H. and R. MACPHERSON. Buffering Action of Hygroscopic Clothing (A) 93
DAVIDOVITZ, J. Structure of Collagen. Theoretical Study Using a Macromolecular Micelle Model (A) 699
DAVISON, P. *See* SCHMITT, F., RUBIN, A.
DAWSON, T., A. DERBYSHIRE, and D. LEMIN. First Year's Experience with Instrumental Match Prediction (A) 730
DE, J. M. *See* PRASAD, L. M.
DEASY, C. and SR. MICHELE, S. C. Study of the Oxidative Degradation of Gelatin and Collagen by Aqueous Hydrogen Peroxide Solutions 665
DEB, J. C. *See* PRASAD, L. M.
DE LA MARE NICHOLS, G. *See* KIRTIN, A.
DEL PEZZO, L. Spectrophotometric Determination of Dialdehyde Starch in Tanning Baths (A) 254
DEMAREZ, P. Necessity of Air Conditioning in Shoe Factories (A) 465
DEMPSEY, M., G. H. GREEN, and B. M. HAINES. Incorporation of Antiseptics Curing Salt for Domestic Sheepskins (A) 459
——— and B. M. HAINES. Curing and Quality of Sheepskins (A) 639
DERBYSHIRE, A. *See* DAWSON, T.
DESJOURS, G. and P. BOURGEAT. Sampling Site of Leather and Skins for Analysis (A) 465
DE STEFANI, G. *See* BIANUCCI, G.
DEVASSY, T. J. *See* SOVANI, R. V.
DEYL, Z. and J. ROSMUS. Determination of Primary Amino Groups in Collagen by a Modified Van Slyke Method (A) 259
DHAR, S. C., and S. M. BOSE. Purification, Crystallization and Physicochemical Properties of Tannase of Aspergillus Niger (A) 38
———, and ———. Purification, Crystallization and Properties of Cathepsin C from Beef Spleen (A) 201
——— and ———. Purification and Properties of Polyphenol Oxidase of Avaram Bark (Cassia auriculata LINN) (A) 690
DOELLE, A., I. ZANGYVAI, and M. KELLER. Changes in Chemical Composition of Hide During Pickling (A) 729

DOHOGUE, A. Some Remarks Concerning Processing of Suedes and Nubuks (A) 562
DONOVAN, R. G., R. L. COLE and S. S. GANDBHIR. Practical Assays of Bating Enzymes (A) 292
DRAKE, M. *See* RUBIN, A.
DREWES, S. and D. ROUX. Condensed Tannins. Optically Active Diastereoisomers of (+) − Mollisacacidin by Epimerization (A) 469
DUMITRU, E. T. Preparation of Collagen Films (P) 141
DURANDE-AYME, R. and J. ROUZET. Examination of Salts Used for Preservation of Hides (A) 698

ERDMANN, H., K. H. FISCHER, and D. STAACK. Combination Tanning with Basic Chromium and Aluminum Salts (A) 85
EFFRONT, Y. *See* BLANCHER, J.
ELDEN, H. Hydration of Connective Tissue and Tendon Elasticity (A) 41
ELLEMENT, P. G. Temperature Effects in Liming (A) 200
ELLIS, E. H. *See* BACHMAN, C. H.
ELLIS, M. J. *See* BOWES, J. H.
ELSINGER, F. Chamois Tanning (A) 562
EL SISSI, A. A. *See* ENDRES, H.
ELTER, J. *See* TOTH, G.
ENDRES, H. Polyamide Chromatography of Organic Compounds (A) 38
———. Theory of Interaction of Vegetable Tannins with Collagen (A) 464
———, P. STADLER, and A. A. EL SISSI. Mechanics of Tanning. III. Tanning Action of Different p-Quinones (A) 46
ENGEL, J. *See* GRASSMAN, W.
ERDEI, L. Brine Curing of Hides (A) 702
ERDMANN, H. Masking Processes in Practical Chrome Tanning (A) 140
ERNI, P. *See* POLGAR, I.
ESHBAUGH, R. H. *See* YOUNG, H. H.
EVERETT, L. L. and H. J. WILLARD. Micrographic Survey of Leather Structure in Veiny Calfskins and Pulpy Fiber Hides (A) 293
EVERITT, A. *See* OLSEN, G.

FARIS, B. *See* FRANZBLAU, C.
FEIN, M. L., E. H. HARRIS, JR., R. R. CALHOUN, JR., and J. N. BOYD. Report on Shrink Temperatures. Determination of Ts on Suspended Leather Specimens 15
FEKETE, K. *See* VERMES, E.
FELS, G. Hydration and Density of Collagen and Gelatin I (A) 695
FILACHIONE, E. M. *See* KORN, A. H.

FIORENZI, G. Tanning Extracts: Determination of Color and Commercial Value (A) 255
FIRCH, JEAN G. *See* GIFFEE, J. W.
FISCHER, K. H. *See* ERDMANN, H.
FISCHER, W. and J. PLAPPER. Influence of Definite Polychloroprene Cements on Attainable Adhesion of Cemented Leather Heavily Oiled (A) 193
FISHMAN, L. *See* FLEISCHMAJER, R., GREENBERG, J.
FLEISCHMAJER, R. and L. FISHMAN. Amino Acid Composition of Human Dermal Collagen (A) 466
FRANZBLAU, C., F. SINEX, and B. FARIS. Isolation of an Unknown Component from Hydrolysates of Elastin (A) 636
FRASER, R., T. MACRAE, and A. MILLER. Molecular Structure of x-Keratin (A) 93
FROMMER, W. *See* ZIEGLER, F.
FUGIKAWA, E. K. *See* REIHSMANN, R. M.
FURUKUWA, K. Tanning, Impregnating, and Finishing Leather (P) 565
FUTAMI, A. *See* TOYODA, H.

GALATIK, J., and J. HULDA. Thermal Stability of Dyeings of Furs with Oxidation Dyestuffs (A) 259
———, F. SMEKAL, and O. KOVACOVA. Indirect Polarographic Calcium Determination in Chrome-Tanned Leather (A) 261
GALIAZZO, G. and S. BEZZI. Polymerization of Formaldehyde in Alkaline Solution Containing Sodium Formate (A) 255
GALLOWAY, A. C. *See* COOPER, D. R.
GANDBHIR, S. S. *See* DONOVAN, R. G.
GANESAN, A. *See* SOVANI, R. V.
GARRISON, W., M. JAYKO, and W. BENNETT-CORNIEA. Radiation-Chemical Oxidation of Peptides in the Solid State (A) 93
GERNGROSS, O., and A. YAZGAN. Absorption of Water by Raw Hide and Leather in Cold and Warm Distilled Water at Changing Water Temperatures. (A) 640
GHANI, M. A. *See* KAMAT, D. H.
GHOSH, D. and P. S. SANTHANAM. Purification of Mangrove Tannin (A) 691
———, K. VIJAYALAKSHMI, and Y. NAYUDAMMA. Goran Liquors Extracted from Commercial Bark (A) 702
———. *See* SANTHANAM, P. S.
GHOSH, S. P. Manufacture of Army Uppers and Chrome Upper Leather (A) 468

GIFFEE, J. W., W. NORMAN, H. MADISON, F. MILLS, and E. A. AUERBACH. Enzyme Unhairing. Analysis of Products Obtained by Enzyme Action on the Epidermal Surface 109
———, JEAN G. FIRCH, J. N. CAMPBELL, and JOANNA S. KIRVAITIS. Influence of Bacterial Enzymes on Collagen Stability 264
GITTERS, S. *See* KANTOR, S.
GLAESER, E. J. *See* MILLSON, H. E.
GLASS, I. R. Economics of the Leather Industry 72
GLIMCHER, M. *See* LEVINE, P.
GLOZIC, B. Preparation of Iron Tannins and Suitable Tanning Processes (A) 195
——— and T. VUKOVIC. New Series of Products for Impregnation or "Hydrophobation" of Leather and Other Fibrous Materials (A) 396
GOEDOENYI, O. and B. KORBULY. Vacuum Drying in the Leather Industry (A) 462
GOLDBERG, B. *See* GREEN, H.
GOLDSTEIN, E., Y. PATEL, and J. HOUCK. Collagenolytic Activity of Intact and Necrotic Connective Tissue (A) 256
GOLODNER, M. and G. E. SABINO. Method for Producing Novel Leather Substitutes (A) 564
GRANT, N. and H. ALBURN. Enhancement of Collagen Aggregation by Catecholamines and Related Polyhydric Phenols (A) 729
GRASSMANN, W., K. KUHN, J. ENGEL, and B. ZIMMERMAN. Denaturation and Renaturation of Collagen (A) 641
GRAWITZ, A. Sharks and Sharkskins. Varieties and Methods of Cutting the Skin (A) 690
———. Sharkskins and Their Uses (A) 690
———. Preservation of Sharkskins (A) 697
———. Tannage of Sharkskins (A) 697
GREEN, H. and B. GOLDBERG. Collagen and Cell Protein Synthesis by an Established Mammalian Fibroblast Line (A) 256
GREEN, G. H. *See* DEMPSEY, M.
GREENBERG, J., L. FISHMAN, and M. LEVY. Positions of Amino Acids in Mixed Peptides Produced from Collagen by the Action of Collagenase (A) 400
GREENWOOD, B., and P. SPEAKMAN. Use of Proteolytic Enzymes in Structural Investigations of Wool Keratin (A) 257
GRETTIE, D. P. Isoelectric Points of Collagen and Gelatin 572
GRIFFITH, J. *See* MASON, P.
GRIMM, O. Rapid Liming with Lime and Sulfides, Bating in the Acid Region (A) 632
GRISET, J., JR. Simultaneous Aldehyde, Chrome and Aromatic Alcohol or Quinone Tannage of Spun Collagen Fiber (P) 567

GRON, P. *See* WUTHIER, R.
GROSZEK, A. and H. WOOD. Heat of Adsorption of Gelatin on Silver Bromide (A) 465
GRUBER, H. A., S. J. VIOLA, and E. F. MELLON. The Composition of Tight Hair Spots 96
GRUENBERG, E. *See* KANTOR, S.
GULBARAN, E. Determination of Optimum Extraction Time for Vegetable Tannin Material Using Modified ALCA Extractor (A) 640
GUNTHEROTH, W. G. *See* MULLINS, G. L.

HAFTER, R. Fibril Formation of Collagen. II. Behavior of Tropocollagen and Gelatin under Isoelectric Conditions (A) 397
HAINES, B. M. *See* DEMPSEY, M.
HALL, D. A. International Review of Connective Tissue Research (R) 146
HALLSWORTH, A. Aspects of Calcification. Availability of ε-Amino Groups in Collagen Aggregates (A) 253
HAMILTON, P. B. Amino Acids on Hands (A) 465
HANNIGAN, M. V., J. NAGHSKI and W. WINDUS. Evaluation of the Relative Serviceability of Vegetable- and Chrome-Tanned Leathers for Bookbinding. 506
——— and W. WINDUS. Tanning Action of a Hemiacetal in Combination with Resorcinol 581
———, *See* WINDUS, W.
HAPPICH, M. L., W. E. PALM, W. WINDUS, and J. NAGHSKI. Compatibility of Glutaraldehyde and Wattle in Drum Tanning 223
HARENBERG, O. *See* HEIDEMANN, E.
HARKNESS, M. and R. HARKNESS. Effect of Cyanide and Nitriles on Connective Tissue (A) 636
HARKNESS, R. *See* HARKNESS, M.
HARRINGTON, W. On the Arrangement of Hydrogen Bonds in the Structure of Collagen (A) 253
HARRINGTON, W. *See* JOSSE, J.
HARRIS, E. H., JR. *See* FEIN, M. L.
HARVA, O. *See* KONTIO, P.
HATTORI, YUTAKA. *See* OKAMOTO, KAZUYOSI, SUGANO, E.
HAUSAM, W. Bacterial Content of Calfskin in Relation to Preservation and Storage Time. New Proposed Preservatives with Different Substances (A) 395
HEIDEMANN, E., H. BRESLER, and O. HARENBERG. Temperature Factor in Chrome Tanning (A) 691
———, O. HARENBERG, and H. BRESLER. Use of Organic Acids in Chrome Tanning (A) 563

HERFELD, H. Recent Developments in Sole Leather 473
———. Bloom on Shoes and Hydrophobication of Leather (A) 632
———. Investigations on Mechanization, Modernization and Automation in Leather Manufacture. I. Feasibility of Mechanization, Modernization and Automatic Control of Beamhouse Operations in Tannery (A) 91
———. West German Tanning School, Ten Years in Reutlingen (A) 396
———,and G. KONIGFELD. Differences between Various Materials for Soles from the Point of View of Structure and Hygiene of the User (A) 92
——— and ———. The Differences between Various Shoe Soling Materials from Viewpoint of Structure and Wear Hygiene (A) 193
——— and ———. Leather and Its Exchange Materials. II. Comparative Examinations of Different Insole Materials (A) 631
——— and M. OPPELT. Investigations on the Liming Process. III. Setting Free of Tanning-active Groups of the Skin in the Limes and Bate (A) 138
——— and W. PAUCKNER. Purpose and Methods of Chemical Cleaning of Leather Garments (A) 92
——— and K. SCHMIDT. Investigations on Oiling Leather. I. Composition of Commercial Anionic Fatliquors from Animal and Vegetable Fats and Stability of their Emulsions (A) 138
——— and I. STEINLEIN. Investigation on Chrome Tanning. IV. Influence of Various Neutralizing Agents on Properties of Chrome Leather (A) 633
HERTEL, O. *See* NEBEL, H. J.
HETZEL, L. V., I. C. SOMERVILLE, and C. J. CARES. Use of Dimethylamine in Hair-destroying Processes 364
———, ———, and ———. Further Studies on Dimethylamine in Hair-destroying Processes (A) 291
HILL, T. and H. E. NURSTEN. Swelling of Hide Powder in Hydrochloric Acid Solution (A) 251
HODGE, *A*. *See* PETRUSKA, J.
HOHN, R. *See* PASTUSKA, G.
HOLMES, A. Degradation of Human Hair by Papain. I. Pattern of Degradation (A) 94
———. Degradation of Human Hair by Papain. II. Experiments in Isolation and Identification of the Protective Substance (A) 93
HOLMES, J. H. and C. H. PEARSON. Note on Rapid Determination of Magnesium in Leather (A) 460
HOPP, V. and K. WUNDRICH. Effect of Gamma Rays on Physical Properties of Gelatin (A) 631
HOUBA, V. Collagenases (A) 261

HOUCK, J. *See* GOLDSTEIN, E.
HULDA, J. *See* GALATIK, J.
HUMPHREYS, G. H. W. and K. CHAND. Simple Two-Pit Sole Leather Tannage (A) 40
——— and ———. Simple Tannage in Two Vats for Sole Leather (A) .. 470
HUMPHRIES, S. G. Decomposition of Tannins in Solution and Its Prevention (A) 700
HURYCH, J. and A. NORDWIG. Biosynthesis of Collagen (A) 691
HVEZDA, O. *See* BLAZEK, L.

IMNADZE, G. I. Rapid Goatskin Liming (A) 87
IRVING, J. *See* WUTHIER, R.
IWAKI, K. *See* SUGANO, E.

JAEGER, U. *See* WILLIAMS-WYNN, D. A.
JAHN, A. *See* BELISARIO, T. M.
JALALUDDIN, K. *See* SHARPHOUSE, J. H.
JAMES, E. R., M. MILLAR and R. G. MITTON. Heat Setting of Chrome Collagen Fibers (A) 462
JAMES, J. and D. WARD. Morphometry of "Doggy" Wool (A) 696
JAYARAMAN, K. S. and Y. NAYUDAMMA. Oil Tannages. I. Oxidation Studies (A) 198
——— and ———. Oil Tannages. II. Some Factors that Govern Fixation of Oil by Pelt (A) 464
JAYKO, M. *See* GARRISON, W.
JOHNSON, D. and J. SIKORSKI. Molecular and Fine Studies of Alpha-Keratin (A) 466
JOHNSON, W. D. Impregnated Shoe Sole Leather (P) 643
JONES, D. E. Banana Tannin and its Reaction with Polyethylene Glycols (A) 689
———. *See* BADRAN, A. M., BUSE, M.
JONES, S. *See* MOSS, M.
JOSEPH, T. K. *See* RAJENDRAN, K. B.
JOSSE, J. and W. HARRINGTON. Role of Pyrrolidine Residue in the Structure and Stabilization of Collagen (A) 199
JULLIEN, I. Preservation of Calfskin (A) 699

KAKADIN, A. Y. Apparatus for Determining Water in Tanning Extracts (A) 262
KAMAT, D. H., M. A. GHANI, and Y. NAYUDAMMA. Manufacture of
KANTOR, S., I. KAPLAN, E. GRUENBERG, and S. GRITTER. Antigenic Properties of Burnt Skin (A) 730
Tannin Extract from Cashew Nut Skins or Testa (A) 690

KAPLAN, A. *See* LEROY, E.
KAPLAN, I. *See* KANTOR, S.
KARPMAN, M. I. Use of Enzymes in Tanning Extract Manufacture (A) .. 86
KAS'YANCHUK, R. *See* SHEVCHENKO, M.
KATZ, G. J. Current Techniques in the Use of Cellulose Lacquers and Lacquer Emulsions (A) 470
KAWAMURA, A. *See* OKAMURA, H.
KEDLAYA, K. J. and B. C. BASU. Mechanism of Vegetable Tanning (A) 687
———, R. SELVARANGAN, and Y. NAYUDAMMA. Better Utilization of Myrobalans. I. (A) 702
KEITH, E. L. *See* KENNEDY, J. E.
KELLER, M. *See* DOELLE, A.
KENNEDY, J. E., E. L. KEITH, and J. C. OGILVIE. Evaluation of Impermeable and Permeable Upper Materials in Boots 420
———. Study of the Microclimate in Footwear (A) 295
KERESE, I. Studies on Solubilization of Collagen and Renaturation of Fibers (A) 200
KHANNA, J. K., S. C. NANDY, and Y. NAYUDAMMA. Rapid Tanning of Sole Leather Using Bag Tanning Technique (A) 702
KHISMATULLINA, L., S. LEVI, and V. KUKHTIN. Synthesis and Investigation of Graft Copolymers of Gelatin (A) 137
KIEZ, K., and A. CARRILLO. Helix Formation by Single- and Double-Chain Gelatins from Rat-Skin Collagen (A) 89
KIKKAWA, M. *See* TOYODA, H.
KIRTIN, A., G. DE LA MARE NICHOLS, and D. PHILLIPS. Estimation of Body Weight and Carcass Composition of Live Lambs with a Radio Frequency Bridge (A) 697
KIRVAITIS, JOANNA S. *See* GIFFEE, J. W.
KLIEGL, W. Effect of Drying Method on Fat Distribution in Retanned Cattle Hide Upper Leather (A) 632
KNOX, W. J., JR., and J. F. WRIGHT. Interaction of Sodium Dodecylsulfate with Gelatin (A) 695
KOHLER, R. Influence of Sewage from Tanneries and Leather Factories on the Waters, on Biological Purification, and on Sludge Digestion (A) 691
KOMAREK, E. and G. MAUTHE. Rationalization of the Vegetable-Synthetic Tannage (A) 701
KONDRATENKO, B. P. *See* KOTLYAREVSKAYA, K. B.
KONIGFELD, G. *See* HERFELD, H., BOLZ, W.
KONTIO, P., O. HARVA, and J. TUOMARLA. Tanning Studies with Dialdehyde Cellulose 48
KORBULY, B. *See* GOEDOENYI, O.

KORN, A. H. and E. M. FILACHIONE. Tanning with Glutaraldehyde. V. Direct Determination in the Leather (A) 294
KOROL'KOVA, K. D. *See* KOROSHAY, E. S.
KOROSHAY, E. S., K. D. KOROL'KOVA, Z. S. PAVLOVA, and P. V. SUBBOTIMA. Migration Fastness Determination of Organic Pigments and Lacquers in Polyvinyl Chloride Films (A) 46
KOTLYAREVSKAYA, K. B., E. A. MAIER, and B. P. KONDRATENKO. Use of Acoustic Waves for Preparation of Finely Dispersed Emulsions (A) 261
KOVACOVA, O. *See* GALATIK, A.
KRISHNAN, D. R. and S. K. BARAT. Extraction of Glue and Gelatin from Skins and Hides. Effect of Various Preparative Treatments on the Precursor (A) 88
Nature and Properties of Glue from Shark Offals (A) 88
———. *See* MALLESAM, P. T.
KRIZEK, M. Corfam and Its Properties (A) 259
KRUGER, R. *See* PASTUSKA, G.
KUENTZEL, A. Interaction of Phenolic Tannins with Collagen (B. M. Das Memorial Lecture) (A) 252
KUHN, K. and B. ZIMMERMANN. Renaturation of Soluble Collagen. IV. Regeneration of Native Collagen Molecules from Alpha-Subunits (A) 470
———. *See* GRASSMAN, W.
KUKHTIN, V. *See* KHUSMATULLINA, L.
KULASEKARAN, S. Some Speculations on the Nature of Protropocollagen (A) 251
——— Structural Implications of the Denaturation of Tropocollagen (A) 463
——— Imide Linkages in the Structure of Tropocollagen (A) 692
KULONEN, E. *See* NANTO, V.
KUMMER, J. Impregnation with Baykanol OI (A) 396
——— Manufacture of Reptile Leather (A) 640
KUNG-YU, H. *See* YUN-TI, C.
KUNKEL, R. *See* SINGLETON, R.
KUNTZ, E. Preparation of Collagenous Materials (P) 141
KUNTZEL, A. and A. NADJAFI. Reactivity of Basic Chromium Salt Solutions with Ion Exchangers of Various Degrees of Cross-Linkage. I. Experiments with Basic Chromium Chloride Solutions (A) 137
KUNTZEL, A., W. RIESS, and A. NADJAFI. Reactivity of Basic Chromium Salt Solutions with Ion-Exchangers of Various Degrees of Cross-linkage. II. Experiments with Chromium Sulfate Solutions (A) 461

KUPCHENKO, L. D. and V. V. PARFENOV. Use of Latexes as Binders for Leather Finishing with Pigment Colors (A) 86
KUTSIDI, D. A. and I. P. STRAKHOV. Influence of Melamine-Formaldehyde Resins on Abrasion Resistance of Sole Leather (A) 332
——— and ———. Interaction of Tannins with Melamine-Formaldehyde Resins (A) 331

LANDMANN, A. W. Finishing of Leathers of Different Tannage (A) 41
——— Fixation of Protein Finishes (A) 199
LANGMAIER, F. Acid-catalyzed Pyrocatechol-Formaldehyde Polycondensation. IV. Chromotography of Pyrocatechol-Formaldehyde Polycondensates (A) 258
LASEK, W. Investigation of the Chemistry and Tanning Action of Extremely Basic Sulfates of Chromium and Aluminum. II. Fundamental Properties of Extremely Basic Sulfates of Chromium in Aqueous Solutions 334
LEELA, K. and K. N. S. SASTRY. Studies on *Peltoforum ferrugenium* Tannins. Isolation of (+) — leucocyanidin (5, 7, 3′, 4′-tetrahydroxyflavan-3, 4 diol) from the Bark (A) 42
LEMIN, D. *See* DAWSON, T.
LEROY, E., A. KAPLAN, S. UDENFRIEND, and A. SJOERDSMA. Hydroxyproline-containing Collagen-like Protein in Plasma and a Procedure for its Assay (A) 253
LEVENKO, P. I. and O. G. SHIFRIN. Increase of Water and Abrasion Resistance of Shoe Upper Leather (A) 262
———. *See* STRAVHOV, I. P.
LEVI, S. *See* KHISMATULLINA, L.
LEVINE, L. *See* SCHMITT, F.
LEVINE, P., M. GLIMCHER, and L. BONAR. Collagenous Layer Covering the Crown Enamel of Unerupted Permanent Human Teeth (A) 637
LEVY, M. *See* GREENBERG, J.
LEWIS, M. S. and KARL PIEZ. Sedimentation-Equilibrium Studies of the Molecular Weight of Single and Double Chains from Rat-Skin Collagen (A) 89
——— and ———. Characterization of Collagen from the Skin of the Dogfish Shark, Squalus acanthras (A) 250
LOSONCZI, G. *See* POLGAR, I.
LOWELL, J. A. and P. R. BUECHLER. Studies on Impregnation; Determinatiton of the Depth of Polymer Penetration 519
LUCK, W., G. MAUTHE, and B. ZORN. Retanning Upper Leather with Resin Tannins (A) 139

MacPherson, R. *See* David, H.
MacRae, T. *See* Fraser, R.
Madison, H. *See* Giffee, J. W.
Magat, A. Control of Warble Fly (A) 258
———. *See* Tapernoux, A.
Mahadevan, T. S. K. and A. Tulsi-Ram. Cerium Tanning (A) 464
——— and P. S. Venkatachalam. Note on Cycle Saddle Leather (A) 43
Maier, E. A. *See* Kotlyarevskaya, K. B.
Majka, E. J. *See* Young, H. H.
Mallesam, P. T., T. S. Krishnan, and P. S. Venkatachalam. Manufacture of N. C. Moroccos from E. I. Goats (A) 400
Malovecz, I. *See* Vermes, E.
Malt, R. and E. Bell. Feather Proteins During Embryonic Development (A) 635
Mandelkern, L. and W. Stewart. Effect of Neutral Salts on the Melting Temperature and Regeneration Kinetics of the Ordered Collagen Structure (A) 90
Mann, S. Haarscheiben in the Skin of Sheep (A) 635
Mason, P. and J. Griffith. Cross-linking of Fibrous Proteins by Formaldehyde (A) 93
———. Thermal Transition in Keratin. I. Thermal Expansion and Structural Transitions in Alpha-Keratin (A) 257
Matoltsy, A. Amino Acid Composition of Prekeratin (A) 256
Mauthe, G. *See* Komarek, E., Luck, W., Spahrkas, H.
May, M. Finishing for the Aniline Look (A) 45
——— Finishing of Leather with an Aniline Look (A) 701
McGavran, M. "Chromaffin" Cell: Electron Microscope Identification in Human Dermis (A) 91
McKnight, J. T. Collagen Casing (P) 141
Meissner, A. *See* Stather, F.
Mellon, E. F. *See* Bitcover, E. H., Gruber, H. A.
Menzies, D., G. Ryan, and J. Roberts. Acidophilia of Aortic Elastin in the Child (A) 94
Metrik, G. L. *See* Aleatyrtseva, I. N.
Mezei, E. Pretanning (P) 566
Michele, S. C. Sr. *See* Deasy, C.
Mikhailov, A. N. *See* Bresler, S. M.
Millar, M. *See* James, E. R., Mitton, R. G.
Miller, A. *See* Fraser, R.
Mills, F. *See* Giffee, J. W.
Millson, H. E., E. J. Glaeser, and J. Dammicci. Mixture of Cationic and Non-Ionic Surfactants, Chlorinated Triphenylmethanes and Tanning Agents and Union Dyeing Therewith (P) 568

MITRA, S. K. *See* SARKAR, S. K.
MITTON, R. G. Dependence of Tearing Loads on Thickness (A) 40
———, F. R. MORGAN, and M. MILLAR. Water Resistance of Sole Leather: Comparison of the Results Given by Two Test Machines with Those Obtained in Actual Wear (A) 200
———. I.U.L.C.S. Physical Testing Commission. Report on Meetings Held at Naples, May 18–20, 1964 (A) 200
———, *See* JAMES, E. R.
MOHANARADHAKRISHNAN, V. and N. RAMANATHAN. Collagen Fibers. I. Density (A) 198
——— and ———. Effect of Chemical Modifications on the Strength of Collagen Fibers (A) 201
——— and ———. Effect of Ultraviolet Irradiation on the Dry Strength of Collagen Fibers (A) 400
——— and ———. Electron Microscopy of Rat-Snake Collagen. (A) 467
——— and ———. Physical Properties of Raw and Tanned Collagen. Torsional Rigidity (A) 702
MONTAGNA, W. Skin (A) 637
MORGAN, F. R. Mechanical Properties of Combination-tanned Collagen Fibers (A) 198
———. *See* MITTON, R. G.
MOROHASHI, Y. *See* OKAMURA, H.
MOSES, R. E. *See* CONSOLOZIO, G. A.
MOSS, M., S. JONES, and K. PIEZ. Calcified Ectodermal Collagens of Shark Tooth Enamel and Teleost Scale (A) 94
MRAVEK, A. Sole Leather Impregnation (A) 258
MUKHERGEE, D. *See* BHATTACHARYA, P. K.
MULLINS, G. L. and W. G. GUNTHEROTH. Collagen Net Hypothesis for Force Transference of Smooth Muscle (A) 688
MUTHIAH, P. L., R. SELVARANGAN, and Y. NAYUDAMMA. Prevention of Grain Crackiness in Chrome Retan Upper Leather 650
———, *See* NAYUDAMMA, Y., SELVARANGAN, R.

NADJAFI, A. *See* KUNTZEL, A.
NAGHSKI, J. *See* HANNIGAN, M. V., HAPPICH, M. L.
NANDY, S. C. *See* KHANNA, J. K.
NANTO, V., J. PIKKARAINEN and E. KULONEN. Optimal Conditions in the Starch-Gel Electrophoresis of Heat-denatured Collagen 63
NASR, A. Lipids in the Skin of Mice Deficient in Essential Fatty Acids (A) 466
NATARAJAN, M. and S. M. BOSE. Biosynthesis of Collagen. I. Effect of Certain Factors on Collagen and Nucleic Acid Content of Rat Skins (A) 694

NAYUDAMMA, Y., S. RAJADURAI, and P. L. MUTHIAH. Waterproofing of Leathers. I. Using Lotus Leaves Wax (A) 464
——— and C. K. RAO. Chrome Vegetable Sandwich Tannages (A) 464
——— *See* ANANTHARAYANAN, S., GHOSH, D., JAYARAMAN, K. S., KAMAT, D. H., KHANNA, J. K., KEDLAYA, K. J., RAM, A. T., RAO, C. K., MUTHIAH, P. L., SANTHANAM, P. S., SASTRY, K. N. S., SELVARANGAN, R., SRINIVASAN, S. R.
NEBEL, H. J., H. STANGER, O. HERTEL, and A. PALM. Production of Condensation Products of Naphthalenesulfonic Acids and Aldehydes (P) 642
NISHIYAMA, I. *See* SUGANO, E.
NORDWIG, A. *See* HURYCH, J.
NORMAN, W. *See* GIFFEE, J. W.
NOVAK, S. B. *See* BABICH, I. Y.
NOVOFASTOVSKII, M. G. *See* OSTROVSKII, V. S.
NOWAK, R. Dry Cleaning Leather and Fur Garments (A) 633
NURSTEN, H. E. and C. H. PEARSON. Modern Analytical Techniques and their Relevance to Leather Science. I. (A) 199
———, *See* COWARD, M., HILL, T.

OKAMOTO, K., Y. HATTORI, and T. AZUMI. Effect of Sulfuric Acid Concentration and Its Amount on the Dechroming of Chrome-tanned Leather (A) 41
———, *See* SUGANO, E.
OKAMURA, H. and A. KAWAMURA. V. Influence of Condition of Beamhouse Operation on the Distribution of Nitrogenous Components in Skin Tissue (A) 197
——— and ——— VI. Influence of Drying Treatment on the Soluble Proteins of Skin Tissue (A) 197
——— and ——— VIII. Influence of Salt-curing on Nitrogenous Components in Skin Tissue (A) 197
——— and ———. IX. Distribution of the Nitrogenous Components in Various Skin Tissues through Beamhouse Operations (A) 197
——— and ———. Studies on Raw Hide and Skin. XI. Amide Nitrogen Control of Skin Tissue (A) 463
———, Y. MOROHASHI, and A. KAWAMURA. Studies on Raw Hide and Skins. IV. Change of Properties of Skin During Its Cure (A) 197
———, ———, and ——— X. Variations of Non-protein Nitrogen in Skin Tissue (A) 197
———, ———, and ———. Uniformity of Skin Tissue in View of the Area Shrinkage by Boiling Water (A) 463
———, K. WADA, Y. MOROHASHI, and A. KAWAMURA. VII. Foundational Investigation of Brine-Curing (A) 197

Ogilvie, J. C., *See* Kennedy, J. E.
Olivannan, M. S. *See* Selvarangan, R.
Olsen, G. and A. Everitt. Retardation of the Aging Process in Collagen Fibers from the Tail Tendon of the Old Hypophysectomized Rat (A) 688
Oppelt, M. *See* Herfeld, H.
Ostrovskii, V. S., V. A. Zhuravskii, and M. G. Novofastovskii. Manufacture of Pig Chrome Upper Leather on a Semicircular Line (A) 330
Otto, G. Effect of Sulfochlorides on the Fatliquoring of Chrome Leather (A) 633

Pallas, F. *See* Stather, F.
Palm, A. *See* Nebel, H. J.
Palm, W. E. *See* Happich, M. L.
———, F. W. Bloom, and L. P. Witnauer. Mechanical Properties of Leather by Means of Non-destructive Dynamic Test (A) 294
Pandav, W. N. *See* Sovani, R. V.
Parfenov, V. V. *See* Kupchenko, L. D.
Parr, J. *See* Stringer, H.
Partridge, S. M. 11th Proctor Memorial Lecture. Part Played by Oxidation in the Synthesis and Breakdown of Connective Tissue (A) 634
Pastuska, G., R. Hohn, and R. Kruger. Action of Gamma Rays on Rawhide and Leather (A) 399
Patel, Y. *See* Goldstein, E.
Pauckner, W. *See* Herfeld, H.
Pavlova, Z. S. *See* Koroshay, E. S.
Pearson, C. H. *See* Holmes, J. H., Nursten, H. E.
Petruska, J. and A. Hodge. Subunit Model for the Tropocollagen Macromolecule (A) 88
Pettit, D. and A. R. Carter. Observations on the Use of Infrared Spectrometry in Leather Analysis (A) 460
Pfahl, D. *See* Rubin, A., Schmitt, F.
Phillips, D. *See* Kirtin, A.
Piez, K. Nonidentity of Three Alpha Chains in Codfish Skin Collagen (A) 470
———. *See* Lewis, M. S., Moss, M.
Pikkarainen, J. *See* Nanto, V.
Plapper, J. Studies of Definite Fatliquor Oils on Leather of Various Tannages (A) 397
———. *See* Fischer, W.
Plauchud, A. Pickling (A) 257
Poats, F. J. *See* Thompson, J. W.

Polgar, I., P. Erni, and G. Losonczi. Enzymatic Hair Loosening (A) .. 256
Polyaninova, N. I. and A. A. Afonchenko. Rapid Tannage at Higher Temperatures (A) 328
Pore, J. Advantages of Sulfated, Sulfonated, and Sulfited Oils in the Leather Industry (A) 634
Prabhu, P. V. *See* Venkataraman, R.
Prasad, L. M., J. M. De, and J. C. Deb. Fuller and Better Utilization of Dry and Wet-Salted Goatskins (A) 467

Rajadurai, S. *See* Banerjee, S., Nayudamma, Y.
Rajendran, K. R. and K. T. Joseph. Colorimetric Method for the Quantitative Estimation of Dialdehyde Starch Fixed in Collagen (A) 44
Ram, A. T. and Y. Nayudamma. Cerium Tannage. II. Mechanism of Tannage (A) 38
Ramanathan, N. *See* Mohanaradhakrishnan, V., Rao, D. P. Goverdhan.
Ramaswamy, D. *See* Ananthanarayanan, S., Sampath, S.
Rao, C. K. and Y. Nayudamma. Mechanism of Vegetable-Aluminum Combination Tannage. IV. Chromatographic Study of Myrobalan Tannins Fixed to Normal and Aluminum-tanned Protein (A) 39
V. Effect of Non-tannins and Such Components of Myrobalan Tannin in Vegetable-Aluminum Combination Tannage (A) 39
———, and Y. Nayudamma. III. Tanning with Solvent Extracts of Vegetable Tanning Materials (A) 39
——— and Y. Nayudamma. II. Reactions on Aluminum-Vegetable Tannin Complexes in Normal Collagen, Deaminated Collagen, and Polyamide (A) 87
———, *See* Nayudamma, Y.
Rao, D. P. Goverdhan and N. Ramanathan. Friction of Collagen Fibers 704
Reed, R. and J. Scholtz. Zirconium Tannages for Heavy Leather (A) 252
——— and ———. Retanned Zirconium Sole Leather (A) 396
Reich, G. Collagen and Gelatin. X. Electrophoretic Separation of Denaturation Products of Tropocollagen on Polyacrylamide Gels (A) .. 638
———. Fundamentals and Application of Adduct-Detection Electrophoresis in Leather Chemistry (A) 92
———. *See* Stather, F.
Reihsmann, R. M. and E. K. Fugikawa. Effects of a Two Resin Treatment of Shoe Upper Leather (A) 290
Ricketts, (n). Dyeing of Leather with Procion Dyes (A) 465
Ridley, J. Dyeing Leather (P) 142
Rieger, W. Problem of Loose Grain in Chrome Upper Leather. II. Retanning (A) 195

RIESS, C. Influence of Traces of Copper on Reduction of Bichromate with Thiosulfate (A) 399
RIESS, W. Increasing Yield When Dissolving Collagen in Dilute Acids (A) 398
———. *See* KUNTZEL, A.
RIGBY, B. Effect of Mechanical Extension Upon the Thermal Stability of Collagen (A) 42
RIVIERE, M. Study of Veins in Box Calf (TN) 313
ROBERTS, J. *See* MENZIES, D.
ROBINSON, I. D. Rate of Crosslinking of Gelatin in Aqueous Solution (A) .. 696
ROGERS, G. and R. CLARKE. Keratin Protofilaments and Ribosomes from Hair Follicles (A) 637
ROSE, W. Solubilization of Keratin by Reaction with Ethylene Oxide (A) .. 637
ROSENBUSCH, K. Oxidative Unhairing, New Depilation Process (A) 45
ROSMUS, J. *See* DEYL, Z.
ROUX, D. *See* DREWES, S.
ROUZET, J. *See* DURANDE-AYME, R.
RUB, F. Catalytic Combustion Solves Problem of Air Pollution in Drying Sewage Sludge (A) 640
———. Catalytic Combustion Solves Problem of Deodorizing Air when Drying Sewage Sludge (A) 691
RUBIN, A., M. DRAKE, P. DAVISON, D. PFAHL, P. SPEAKMAN, and F. SCHMITT. Effects of Pepsin Treatment on the Interaction Properties of Tropocollagen Macromolecule (A) 469
———. *See* SCHMITT, F.
RUSSELL, A. E. *See* SHUTTLEWORTH, S. G.
RYABAKONSKII, A. V. *See* SUSHKEVICH, B. I.
RYAN, G. *See* MENZIES, D.

SABINO, G. E. *See* GOLODNER, M.
SAITGALEEV, N. S. *See* ZURABYAN, K. M.
SAMPATH, S. and D. RAMASWAMY. Studies on Noncationic Chromium-Polyphosphate Complexes. I. II. Experimental and Analytical Procedures. III. Colorimetric Estimation of Phosphates and Estimation of Complexly Held Phosphates (A) 467
——— and ———. IV. Determination of Basicity of Chrome Polyphosphate Complexes (A) 694
SAKURAI, K. *See* SUGANO, E.
SANTHANAM, P. S., D. GHOSH and Y. NAYUDAMMA. Fixation of Goran Tannins on Chemically Modified Collagen (A) 196
———. *See* GHOSH, D.

SARKAR, K. S. *See* BHATTACHARYA, P. K.
——— and S. K. MITRA. Histological Characteristics of Indian Frog Skin (R. Hexadactyla) (A) 140
SASTRY, K. N. S. and Y. NAYUDAMMA. Dhava Tannins IV. Biosynthesis of Polyphenols of Dhava (A) 42
———. *See* LEELA, K.
SAX, G. Abrasion Defleshing Partially Tanned Fur-skins (P) 567
SCHMIDT, K. *See* HERFELD, H.
SCHMITT, F., L. LEVINE, A. RUBIN, D. PFAHL, and P. DAVISON. Antigenicity of Tropocollagen (A) 88
———. *See* RUBIN, A.
SCHMITT, R. *See* TANCOUS, J. J.
SCHOENFELD, A. Pre-base Coat in the Finishing of Calfskins with Corrected Grain (A) 257
SCHOLZ, J. *See* REED, R.
SELIGSBERGER, L. Determination of Silicones in Leather (A) 292
———. Absorption of Water Vapor by Leather 402
SELVARANGAN, R., P. L. MUTHIAH, and Y. NAYUDAMMA. Rapid Process for Making Waterproof Sole Leather (Light and Heavy) (A) 42
——— and M. S. OLIVANNAN. Rapid Process for Alum or Vegetable Tanning and Finishing of Reptile Skins (A) 196
———. *See* BANGARUSWAMY, S., KEDLAYA, K. J., MUTHIAH, P. L.
——— and Y. NAYUDAMMA. Alum Tannage. I. Studies on the Chemistry of Basic Aluminum Tanning Salts (A) 465
——— and ———. Combination Tannages. I. Alum Chrome Tannage (A) 693
——— and ———. Alum Tannages. II. Tanning Action of Basic Aluminum Salts (A) 692
SHARPHOUSE, J. H. and K. JALALUDDIN. Effect of Variations of Leather Surface on Polymer Dispersion Finishes (A) 41
SHEVCHENKO, M. and R. KAS'YANCHUK. Adsorption of Tanning Materials from Water and Their Resistance to Destructive Oxidation (A) 689
SHIFRIN, I. G. *See* STRAKHOV, I. P., LEVENKO, P. I.
SHIMONY, C. *See* BORASKY, R.
SHUTTLEWORTH, S. G. and A. E. RUSSELL. Kinetics of Chrome Tannage. I. Solvent Extraction, Electrophoretic, and Spectrophotometric Studies of Coordination of Acetate Ions to Trivalent Chromium Ions (A) 639
———. Note on Temperature Effects in Vegetable Tanning (A) 693

SHUTTLEWORTH, S. G. and A. E. RUSSELL. Kinetics of Chrome Tannage. II. Comparison of the Kinetics of Coordination of Trivalent Chromium Ions to Acetate Ions, Hide Powder, and Pelt Pieces (A) 701
SIDON, A. Dry-Warm Tanning with Chrome Salts (A) 637
SIKORSKI, J. *See* JOHNSON, D.
SIMON, A. Quality of Leveled Sole Leather (A) 91
SIMONCINI, A. Polarographic Investigation of Chromium Salts. Determination of Cationic Chromium Present in the Solution (A) 254
———. Action of Dialdehyde on Chromium Salts (A) 254
SINEX, F. *See* FRANZBLAU, C.
SINGLETON, R., R. KUNKEL, and B. SPRAGUE. Factors Influencing Evaluation of Actinic Degradation of Fibers (A) 635
SJOERDSMA, A. *See* LEROY, E.
SKURIKHIN, N. F. Feature of Construction and Standardization of Screw Drums (A) 87
SLEIGHT, J. P. Suggested Provisional Method for the Determination of Chromium in Used Liquors (A) 700
———. Time Factor in Leather Processing: Chrome Tannage (A) 701
SMEKAL, F. *See* GALATIK, A.
SOMERVILLE, I. C. *See* HETZEL, L. V.
SOVANI, R. V. and A. GANESAN. Manufacture of Cheaper Types of Belting Leather by Bag Tanning (A) 198
——— and ———. Manufacture of Sole Leather by Bag Tannage Using Aain Bark and Myrab (A) 39
———, T. J. DEVASSY, W. N. PANDAV, and A. GANESAN. Manufacture of Bag-tanned Sole Leather from Imported Flint Hides (A) 201
SPAHRKAS, H. and G. MAUTHE. Chrome-Acetate Complex Tannage (A) .. 565
SPEAKMAN, P. *See* GREENWOOD, B., RUBIN, A.
SPICKA, M. Leather Research Institutes of Some Socialistic Countries (A) .. 259
SPRAGUE, B. *See* SINGLETON, R.
STRACK, W. Fires in Leather Spraying and Drying Equipment. Investigation of Causes of Fires and Possibilities of Combatting Fires (A) .. 92
SRINIVASAN, S. R. and Y. NAYUDAMMA. Sulfonyl Chloride Tannage. IV. Water Absorbing Property of Sulfonyl Chloride-Tanned Leather (A) 394
——— and ———. II. Reaction Mechanism (A) 43
III. Preparation and Tanning Studies of Different Sulfonyl Chlorides (A) 44
——— and ———. Determination of Free Sulfonic and Sulfuric Acids Present in Oil-reduced Chrome Liquors by Nonaqueous Technique (A) 251

STAACK, D. *See* ERDMANN, H.
STADLER, P. *See* ENDRES, H.
STANGER, H. *See* NEBEL, H. J.
STATHER, F. and C. WIEGAND. Investigations on the Technology of Chrome Tanning. III. Possibilities for Rationalization of Chrome Tanning Regulation of Tanning and Retanning Intensities of Chrome Leather (A) 638
———, G. REICH, and F. PALLAS. Reactions of Aromatic Sulfochlorides with Amino Acids, Collagen, and Gelatin (A) 694
———. 75 Years of German Leather Institute at Freiberg, 1899–1964 (A) 687
——— and A. MEISSNER. Printing Depth and Permanence of Artificial Printed Grain on Leather (A) 687
STEARNS, E. Computor Color Matching (A) 91
STEER, D. *See* TRISTRAM, G.
STEINLE, E. C., JR. Development of Biodegradable Surfactants as an Answer to Water Pollution Problem (A) 291
STEINLEIN, I. *See* HERFELD, H.
STEWART, W. *See* MANDELKERN, L.
STOCKHAUSEN, J. Oiling Leather (P) 204
STRAKHOV, I. P., P. I. LEVENKO, and I. G. SHIFRIN. Influence of Small Doses of Gamma Rays on Some Physicomechanical Properties of Chrome Leather (A) 196
———. *See* KUTSIDI, D. A.
STRELKOVA, I. V. *See* ALEATRYTSEVA, I. N.
STRINGER, H. and J. PARR. Shrinkage Temperature of Eye Collagen (A) .. 466
STRUDWICK, J. W. Temperature Effects in Leather Dyeing (A) 634
SUBBOTIMA, P. V. *See* KORDSHAY, E. S.
SUGANO, E., I. NISHIYAMA, and E. IWAKI. Consideration of Ball Burst Test (A) 463
———, ———, and ———. III. Effects of Pretreatment of Hide Powder with Chrome Alum (A) 38
———, ———, and ———. Vegetable Tanning. XVII. Influence of Repeated Application of Reused Rapid Vegetable Tanning Liquor and of Its pH Value Control by Ion Exchange Membrane upon the Properties of Leather (A) 40
———, ———, Y. HATTORI, K. OKAMOTO, M. SUGITA, and K. SAKURAI Analysis of Vegetable Tanning Extracts. II. Precision among Analysts and Laboratories (A) 38
SUGITA, M. *See* SUGANO, E.
SUMMERS, G. W. and C. K. CLAYCOMB. Amino Acid Composition of Collagen Isolated from the Oral Cavity of Sperm Whale (A) 698

Sushkevich, B. T. and A. V. Ryabokonskii. Sheep Shoe Upper Leather (A) 329
Svancer, J., and A. Blazek. Operational Liming Control. I. (A) 259
Sykes, R. L. Temperature Effects in Chrome Tanning. I. General Introduction and Some Preliminary Studies (A) 251

Tapernoux, A. and A. Magat. Determination in the Blood of Steers of Trichlorfon Administered Percutaneously (A) 257
Tancous, J. J. Mechanism of Calcium Soap Formation in Heavy Hides and Its Influence on Subsequent Tannage 206
——— and R. Schmitt. Incidence and Predictability of Pulpiness in Side Upper Leather (A) 290
Taylor, K. N-Terminal Residues of Aortic Elastin (A) 91
Telmon, F. Quebracho Extract and Ways of Using It (A) 691
Tesoro, G. C. Process of Chemically Modifying Proteinaceous Materials with Aziridine Compounds and Products (P) 203
Thompson, J. W. and F. J. Poats. Economics of Cutting Raw Cattle Hides (A) 700
Tomoda Y. and M. Tsuda. Importance of Hydroxyl Radicals as Intermediates in Cross-linking High Polymers by Gamma Irradiation (A) 697
Toth, G. Relationship between Fiber Structure of Leather and the Technological Processes (A) 463
——— and J. Elter. Influence of Hydrotropic Substances on the Tensile Strength of Leather (A) 696
Toyoda, H., T. Yarisawa, A. Futami, and M. Kikkawa. Studies on Treatment of Tannery Wastes. I. Properties of Wastes from Various Stages of Tanning Processes (A) 252
II. Change in Composition by Mixing and Storage (A) 252
III. Effect of Chemical Treatments (A) 252
IV. Effect of Treatment with Ferric Chloride (A) 395
V. Effect of Treatment with Lime (A) 395
VI. Effect of Anaerobic Digestion (A) 395
VIII. Effect of Stepwise Treatments by Anaerobic Digestion, Active Sludges, and Chemical Treatment (A) 395
Tristram, G., J. Worrall, and D. Steer. Thermal Denaturation of Soluble Calfskin Collagen 730
Tristram, G. *See* Candlish, J.
Tsuda, M. *See* Tomodo, Y.
Tulsi-Ram, A. *See* Mahadevau, T. S. K.
Tuomarla, J. *See* Kontio, P.

ULANOV, S. A. New Method of Analysis in Leather Manufacture (A) 329
UDENFRIEND, S. *See* LEROY, E.

VENKATARAMAN, R. and P. V. PRABHU. Scope for Development of Shark Skin Leather Industry (A) 468
VENKATACHALAM, P. S. *See* MAHADEVAN, T. S. K., MALLESAM, P. T.
VERMES, E. and L. VERMES. Methods of Splitting Chrome-tanned, Cattlehide Upper Leather (A) 634
———, K. FEKETE, and I. MALOVECZ. Influence of Previous Operations on Properties of Finish Film on Paste-dried Snuffed Side Upper Leather (A) 258
VERMES, L. *See* VERMES, E.
VERNET, F. and P. BOURGEAT. Comparative Study of the International IUC Methods and the French AFNOR Methods for the Analysis of Sole Leather (A) 700
VIJAYALAKSHMI, K. *See* GHOSH, D.
VILLA, L. Waste Waters in the Tanning and Tawing Industry and their Purification (A) 634
VIOLA, S. J. *See* GRUBER, H. A.
VOLPERT, G. L. and V. D. ZAKHAROZ. Unhairing Hides without Lime (A) 330
VOLOSHINA, L. G. *See* BABICH, I. Y.
VUILLAUME, R. Struggle Against Bovine Warble Fly (A) 90
———. Provisional Report on Flaying of Large Animals with Lateral Cuts (A) 699
VUKOVIC, T. *See* GLOZIC, B.

WADA, K. *See* OKAMURA, H.
WALKER, W. P. Temperature Effects in Vegetable Tanning (A) 251
WARD, A. G. Collagen Research (A) 688
———. Tanning in the U. S. to 1850 (A) 698

WARD, D. *See* JAMES, J.
WICKI, H. Leather: Survey for the Textile Technologist (A) 467
WIEGAND, G. *See* STATHER, F.
WILLARD, H. J. *See* EVERETT, L. L.
WIGGALL, P. *See* WREN, J.
WILLIAMS-WYNN, D. A. and U. JAEGER. Reaction of Mimosa Extract with Chrome-tanned Collagen. I. Reaction during Manufacture (A) 468

WINDUS, W. and M. V. HANNIGAN. Tanning with Hemiacetal and Resorcinol or Pyrogallol Solution (P) 567
———. *See* HANNIGAN, M. V., HAPPICH, M. L.
WITNAUER, L. P. *See* PALM, W. E.
WOLFRAM, L. J. Reactivity of Disulfide Bonds in Strained Keratin (A) 688
WOOD, H. *See* GROSZEK, A.
WORRAL, J. *See* TRISTRAM, G.
WORTHINGTON, W. *See* BUSE, M.
WREN, J. and P. WIGGALL. Improved Colorimetric Method for Determination of Proline in the Presence of Other Ninhydrin-positive Compounds (A) 469
WRIGHT, J. F. *See* KNOX, W. J. JR.
WUNDRICH, K. *See* HOPP, V.
WUTHIER, R., P. GRON, and J. IRVING. Reaction of 1-Fluoro-2, 4 Dinitrobenzene with Bone. Studies on Relationship between Bone Collagen and Apatite (A) 89

YARISAWA, I. *See* TOYODA, H.
YATES, J. R. Studies on Uptake of Water by Sheepskins. I. Effect of Characteristics of the Skin. 712
YAZGAN, A. *See* GERNGROSS, O.
YOUNG, H. H., E. J. MAJKA, and R. H. ESHBAUGH. Method for Producing Leather Fiber Slurry (P) 642
YUN-TI, C., C. YUN-WEN, C. CHU, and H. KUNG-YU. Dissociation Constants of N-Substituted Glycines (A) 199
YUN-WEN, C. *See* YUN-TI, C.

ZAKHAROV, V. D. *See* VOLPERT, G. L.
ZANGYVAI, I. *See* DOELLE, A.
ZHUKOV, V. I. *See* CHISTYKOVA, N. V.
ZHURAVSKII, V. A. *See* OSTROVSKII, V. S.
ZIEGLER, F. and W. FROMMER. Process for Production of Purified, Salt-free Enzyme Preparations (P) 141
ZINZ, B. Practical Trials with the R F P Process (A) 631
ZIMMERMAN, B. *See* GRASSMAN, W., KUHN, K.
ZORN, B. *See* LUCK, W.
ZURABYAN, K. M. and N. S. SAITGALEEV. Use of Polyvalent Metal Stearates as Thickeners for Greasing Mixtures for Leather (A) 329

SUBJECT INDEX

Absorption of Water Vapor by Leather 402
ALCA. *See also* Committees.
- Amendments to by-laws 434
- Annual meeting, 1966 35
- Annual meeting, 1965, papers for 36, 84
- Annual meeting, 1965, tentative program 289
- Audit Report 244
- Auditing Committee Report 562
- Budget, 1965 189
- Business meeting, 1964 295
- Candidates for election, 1965 83
- Convention, 1965 389
- Council Meeting 33, 187, 558
- Directory Changes 37, 240, 678, 729
- Editor's Report 123, 560
- New Editors 124
- Prize paper award 391
- Secretary's Notice 81, 82, 192, 236, 388, 433, 434
- Status of Association 387
- Tentative Program, 1965 Meeting 289

ALCA-ASTM Joint Committee on Leather 176, 437
Alum Tannages 465, 692
Alum Tanning, Reptile Skins 196
Alum, Tanning chemicals 681
Amino Acids, Reactions of Aromatic Sulfochlorides 694
Analysis, vegetable tanning extracts 38
Apparatus, shrink temperature 15
AUERBACH, E. Biography 120
Avaram Bark, Polyphenol Oxidase 690

Bag Tanning Technique, Rapid Tanning Sole Leather 702
Ball Burst Test 463
Baykanol OI, impregnation with 396
BELISARIO, T. M. Biography 381
Bichromate, reduction with thiosulfate 399
Bloom on shoes 632
Bone
- Fluorescence 698
- Human, photoelectric effects 699

Bookbinding, leathers, serviceability 506
BORASKY, R. Biography 174

Bowes, J. H. Biography 286
Box Calf, study of veins 313
Bacterial enzymes, and collagen stability 264
Boyd, J. N. Biography 31
Braunschweig, T. D. Biography 120
Buechler, P. R. Biography 556

Calcification 253
Calfskins
  Finishing 257
  Preservation 395, 699
Calhoun, R. R. Biography 31
Campbell, J. N. Biography 286
Cares, C. J. Biography 381
Carter, T. J. Biography 31
Casein, modified
  manufacture for BH base coat 260
  use in tanneries 260
Cater, C. W. Biography 286
Cellulose lacquer, current techniques in the use 470
Cerium tannage 38, 464
Chain, J. T. Biography 675
Chamois tanning 562
Chemistry and Technology of Leather. Volume IV. Evaluation of Leather.
  Book Review 569
Chromatography, circular on paper 253
  Polyamide, of organic compounds 38
Chrome collagen fibers, heat setting 462
Chrome Leather
  determination protein-bound acids 332
  fatliquoring 633
  influence of gamma rays 196
Chrome liquors, free sulfonic and sulfuric acids 251
Chrome retan leather 43
Chrome tannage
  kinetics 701
  kinetics of coordination, acetate ions 639
Chrome-tanned collagen, reaction with mimosa extract 468
Chrome-tanned leathers
  bookbinding 506
  effect of sulfuric acid on dechroming 41
  Polarographic calcium determination 261

Chrome-tanned proteins, sulfato group 42
Chrome tanning
masking processes 140
neutralizing agents 633
organic acids, use of 563
technology 638
temperature effects 251
temperature factor 691
Chrome upper leather, manufacture 468
pig 330
Chromium in Used Liquors 700
Chromium-polyphosphate complexes 467
Chromium salts
action of dialdehydes 254
dry-warm tanning 637
polarographic investigation 254
solutions, reactivity with ion exchangers 461
Chromium sulfates, properties in aqueous solution 334
Coating 144
Collagen
aggregation 729
arrangement of hydrogen bonds 253
beta components 94
biosynthesis 691, 694
calfskin, thermal denaturation 730
casing 141
codfish skin 470
denaturation and renaturation 641
determination of primary amino groups 259
dissolving in dilute acids 398
effect of mechanical extension on thermal stability 42
effect of neutral salts on melting temperature 90
electrophoresis 63
electrophoretic separation of denaturation products 638
eye, shrinkage temperature 466
fibril formation 397
fibril structure, electromicroscopic data 148
fixation of goran tannins 196
heat-denatured 63
helix formation 89
human dermal, amino acid composition 466
human skin, alpha and beta components 688
hydration and density 695

interaction of phenolic tannins 252
mixed peptides produced by collagenase 400
isoelectric point 572
molecular weights of single and double chains 89
net hypothesis, transference of smooth muscle 688
oxidation with hydrogen peroxide solutions 665
oxidative degradation 665
pyrrolidine residues 199
rat snake, electron microscopy 467
research 688
raw and tanned, torsional rigidity 702
reactions of aromatic sulfochlorides 694
relationship between bone collagen and apatite 89
shark tooth 94
skin of dogfish shark 250
solubilized, separation from dried skin and hide 393
soluble, renaturation 470
sperm whale, amino acid composition 698
stability with bacterial enzymes 264
structure 699
synthesis 256
treating 142
Collagenases 261
Collagenous layer on human teeth 637
Collagenous materials, preparation of 141
Collagen fibers
chemical modification of strength 201
density 198
effect of ultraviolet irradiation 400
friction of 704
material 144
mechanical properties of combination tanned 198
retardation of aging 688
solubilization and renaturation 200
Collagen fibril structure deduced from electronoscopic data 148
Collagen films, preparation 141
Collagen sponge, preparation 563
Collagenolytic activity of connective tissue 256
Color matching 91
Combination tannages 693
Complexes, non-cationic chrome phosphate 694
Connective tissue
effect of cyanide and nitriles 636
hydration 41

Cooper, D. R. Biography 381
Corfam 259
Cronin, F. P. Biography 432
Curing methods, wet salted hides 350
Curing-salt, antiseptics 459

Deasy, C. L. Biography 675
Degradation, human hair by papain 93, 94
Dehairing 566
Deliming 644
Dhava tannins 42
Dialdehyde cellulose 48
Dialdehyde starch
in collagen 44
spectrophotometric determination 254
Dimethylamine, hair destroying processes 364
Drying, leather and pelts 142
Drying, tanned skins 646
Dyeing
leather 142
thermodynamics 137
Procion dyes 465
Dyestuffs
absorption 330
Oxidation, thermal stability in furs 259

Economics of leather industry 72
Elastic tissue 634
Elastin, aortic 91, 94
Elastin, component from hydrolysates 636
Electrophoresis, applications in leather industry 92
Ellis, M. J. Biography 286
Emulsions, use of acoustic waves for preparation 261
Enzymes
Interaction in extracting 689
in tanning extract manufacture 86
process for preparation 141
unhairing 92
unhairing, analysis of products from epidermal surface 109
Exchange materials, insoles 631

Fatliquoring 643
Fein, M. L. Biography 31

Fibers, actinic degradation 635
Films, polyvinyl chloride, migration fastness 46
Finishes, effect of variation of leather surfaces 41
Finishing, aniline look 45
Finishing leathers of different tannage 41
FIRCH, J. G. Biography 287
Fires, in leather spraying and drying equipment 92
Flaying of large animals with lateral cuts 699
Fluorescence, Bone 698
Formaldehyde
  cross-linking of fibrous proteins 93
  determination in collagen by carbon-14 assay 275
  polymerization in alkaline solution 255
Fundamental properties, extremely basic sulfates of chromium in aqueous solution 334
Fur garments, dry cleaning 633
Fur skins, abrasion defleshing 567

GALLOWAY, A. C. Biography 381
GARDNER, ALEXANDER. Obituary 436
Gelatin
  effect of gamma rays on physical properties 631
  electrophoretic separation of denaturation products 638
  fining solutions with phosphates 141
  from skin and hide 88
  graft copolymers 137
  heat of adsorption on silver bromide 465
  hydration and density 695
  interaction of sodium dodecylsulfate 695
  isoelectric point 572
  oxidative degradation 665
  oxidation with hydrogen peroxide 665
  rate of crosslinking in aqueous solution 696
  reactions of aromatic sulfochlorides 694
German leather institute at Freiberg 687
GIFFEE, J. W. Biography 120
GLASS, I. R. Biography 79
Glue, from skins and hides 88
Glutaraldehyde
  compatibility with wattle 223
  determination in collagen by carbon-14 assay 275
Glycines, dissociation constants 199

Goatskins, liming 87
Goran liquors from commercial bark 702
Grain crackiness in chrome retan upper leather 650
prevention 650
Greasing mixtures, thickness 329
GRETTIE, D. P. Biography 619
GRUBER, H. A. Biography 120

Haarscheiben 635
HAAS, OTTO, appreciation 124
Hair destroying process, use of dimethylamine 364
Hair loosening, enzymatic 256
Hair, tight spots 96
HANNIGAN, M. V. Biography 556
HAPPICH, M. L. Biography 234
HARRIS, E. H., JR. Biography 31
HARVA, O. Biography 79
HERFELD, H. Biography 472
HETZEL, L. V. Biography 381
Hide powder, swelling in hydrochloric acid solutions 251
Hides
brine curing 702
calcium soap formation 206
changes in chemical composition during pickling 729
curing methods 350
economics of cutting 700
preservation, examination of salts 698
raw 197
HILTERHAUS, FRED. Obituary 435
History of Leather and the art of tanning. Review 145
HULTQUIST, JOHN WILLARD. Obituary 385
Hydration of connective tissue 41

Impregnation, depth of polymer penetration 519
Industrial waste water control 647
International commission for chemical analysis of leather 462
International Review of Connective Tissue research. Review 146
International Union of Leather Chemists Societies
physical testing commission 200
provisional program, 1965 445
Ion exchangers, reactivity of basic chromium salt solutions 461
Isoelectric points, collagen and gelatin 572

JAHN, A. S. Biography 381
JALCA
editor 123
notes for contributors 2
John Arthur Wilson Memorial Lecture 473

KEITH, E. L. Biography 432
KENNEDY, J. E. Biography 432
Keratin
alpha, molecular and fine structure 466
alpha-beta transformation 137
molecular structure 93
protofilaments and ribosomes from hair follicles 637
reaction with ethylene oxide 637
reactivity of disulfide bonds 688
thermal transitions 257
wool, structural investigations 257
KIRVAITIS, J. S. Biography 287
KONTIO, P. K. Biography 79
KULONEN, E. Biography 79

Lambs, weight estimation with radio frequency bridge 697
LASEK, W. Biography 382
Leather
absorption of water 640
absorption of water vapor 402
action of gamma rays 399
action of perspiration 700
adhesion with polychloroprene cements 193
belting, by bag tannage 198
bookbinding 506
bottoming 142
chrome retan 43
chrome-tanned, effect of sulfuric acid on dechroming 41
cycle saddle 43
damage by x-rays on grain structure 45
determination of Ts on suspended specimens 15
dressing 568
dry cleaning 633
drying 644
dyeing, temperature effects 634
fatliquoring 647

fiber slurry 642
fiber structure 463
finishing 41, 565, 568
finish removal 569
finishing with aniline look 701
hydrophobication 632
impregnating 565
impregnation or "hydrophobation" 396
oiling 204
oils 634
loose grain in chrome upper 195
mildew proofing 645
permanence of printed grain 687
plumping 647
polishing 642
pressing 644
processing time factor 701
sampling sites 465
strengthening 143
studies of fat-liquor oils 397
stuffing 646
substitutes 193
tanning 204, 565
tearing-strength tests 4
tensile strength, influence of hydrotropic substances 696
treating 202
water proofing 464
Leather analysis, infrared spectrometry 460
Leather boards, analysis 467
Leather finishing, use of latexes as binders 86
Leather garments, cleaning 92
Leather industry, economics 72
Leather Manufacture
mechanization, modernization, automation 91
method of analysis 329
Leather quality, influence of x-rays 394
Leather substitutes, method for producing 564
Liming 138, 632
operational control 259
temperature effects 200
Lipids, in skin of mice 466
LOWELL, J. A. Biography 556

MADISON, H. L. Biography 120
Manual apparatus for separating solubilized collagen from skin and hide 393
Match prediction, instrumental 730
Melamine-formaldehyde resins
influence on abrasion resistance of sole leather 332
interaction with tannins 331
MELLON, E. F. Biography 121
Methods
breaking strength of leather by grab method 595
bursting strength of leather by ball method 587
comparative study of IUC and French AFNOR 700
calculation of basicity of chrome tanning liquors 545
determination of acidity of chrome tanning liquors 552
determination of chromium in chrome tanning liquors 549
determination of chromium in used liquors 700
determination of pH of chrome tanning liquors 546
elongation of leather 599
grain crack and extension of leather by Mullen test 603
international, for chemical analysis of leathers 698
slit tear resistance of leather 610
tensile strength of leather 592
thermal conductivity constant of leather with the Cenco-Fitch apparatus 614
MICHELE, S. C., SR. Biography 675
MILLS, F. Biography 121
Moffat Medal 728
MONSOROFF, BORIS. Obituary 385
MUTHIAH, P. L. Biography 675
Myrobalans, better utilization 702

NAGHSKI, J. Biography 234
NANTO, V. Biography 80
Naphthalenesulfonic acids and aldehydes, condensation products 642
NAYUDAMMA, Y. Biography 676
NORMAN, W. P. Biography 121

OGILVIE, J. C. Biography 432
Oiling, composition of commercial fatliquors 138
Oiling leather, investigation 460
Optimal conditions in starch-gel electrophoresis of heat-denatured collagen .. 63

PALM, W. E. Biography 234
Patents 141–145, 201–204, 563–569, 642–647

Photoelectric effects in human bone 699
Pickling 251
Pig leather finishing 328
PIKKARAINEN, J. Biography 80
Polymer crosslinking by gamma irradiation 697
Polymer dispersion finishes, effect of variations in leather surfaces 41
Portable Laboratory gives fast check on operation (TN) 84
PORTER, RALPH E. Obituary 621
Prekeratin, amino acid composition 256
Preservatiton of hides 698
Pretanning 566
Proctor Memorial Lecture 634
Proline, determination in presence of other ninhydrin-positive compounds 469
Proteinaceous materials, modifying with aziridine compounds 203
Protein finishes, fixations 199
Proteins 144
  feather 635
Protropocollagen 251
Pyrocatechol-formaldehyde polycondensation 258

Quebracho extract 691
Quinones, tanning action 46

RAMANATHAN, N. Biography 726
RAO, D. P. GOVERDHAN, Biography 726
Rapid sole leather tannage 450
Raw hide
  absorption of water 640
  action of gamma rays 399
  studies 463
Recent developments in sole leather 473
Reconstituted collagen fibers, stabilizing agents 459
Reptile leather, manufacture 640
Research Liaison Committee 237, 249, 627
Retanned upper leather, fat distribution 632
Retanning with resin tannins 139
R F P process 631
RHEUBY, WILLIAM R. Obituary 384
RIVIERE, M. Biography 287
RODDY, W. T. Awarded Moffat Medal 728

Screw drums, construction and standardization 87
SELIGSBERGER, L. Biography 432

SELVARANGAN, R. Biography 676
Sewage from tanneries and leather factories 691
Sewage sludge
air pollution in drying 640
catalytic combustion 691
Shark skins 690
leather industry development 468
preservation 697
tannage 697
Sheepskins, curing 639
Sheepskins, water uptake 712
SHIMONY, C. Biography 174
Shoe factories, air conditioning 465
Shoe upper leather
increase of water and abrasion resistance 262
sheep 329
Shoe upper materials, permeable and impermeable 420
Shrink temperature 15
suspended leather specimens 15
Skin 637
burnt, antigenic properties 730
sampling site 465
studies of amide nitrogen content 463
Sole leather, impregnation 258
Skins, raw 197
S. L. T. C. Official methods of analysis 686
Sole leather
bag tanned from flint hides 201
impregnated 643
impregnation 258
manufacture by bag tannage 39
quality 91
rapid process for making waterproof 42
rapid tannage 450
recent developments 473
tannage in two vats 470
tannage, simple two pit 40
waterproof 42
water resistance 200
zirconium retanned 396
SOMERVILLE, I. C. Biography 382

Specifications review committee 308, 621
membership roster 624
Standard trim pattern for domestic cattlehides 394
Sulfonyl chloride tannage 43, 394

TANCOUS, J. J., award for outstanding paper 391
TANCOUS, J. J. Biography 234
Tannage
cerium 38
chrome-acetate 565
chrome-vegetable 464
for sole leather 690
influence of calcium soap formation 206
mechanism 38
mechanism of vegetable-chromium combination 39
rapid 328
spun collagen fiber 567
sole leather, simple two pit 40
sulfonyl chloride 43
vegetable-chromium combination 87
Tannages
combinations, alum, chrome 693
oil 198, 464
Tannases of Aspergillus niger, preparation, crystallization and physico-chemical properties 38
Tannery sewage 125
Tannery wastes, effect of treatment with lime 40
properties 635
purification 137
treatment 252, 395
Tannery waste waters, depollution 698
purification 689
Tannin, banana, reaction with polyethylene glycols 689
Tannin, mangrove, purification 691
Tannin extract from cashew nut skins 690
Tanning
combination, with chromium and aluminum salts 85
compatibility of glutaraldehyde and wattle 223
dialdehyde cellulose 48
hemiacetal with resorcinol 567, 581
in U. S. until 1850 698
iron tannins 195

materials, adsorption from water 689
mechanism with p-quinone 46
stability of chromium collagen complex 195
Tanning action of hemiacetal in combination with resorcinol 581
Tanning chemicals, advantages of alum 681
Tanning extracts
determination of color and commercial value 255
determining water 262
Tanning studies with dialdehyde cellulose 48
Tannins
biosynthesis in indigenous plants 43
determination in extracts, syntans, and liquors 86
dhava 42
peltoforum ferrugenium 42
prevention of decomposition in solution 700
Tawing 143
Tearing loads, dependence upon thickness 40
Tearing-strength tests for leather 4
slit-tear 4
double-hole stitch tear 4
single-hole stitch tear 4
tongue tear 4
Technical methods, chemical 36
Tendon, elasticity on hydration 41
Tendon fibers, ascorbic acid in 466
Tests, tearing strength 4
THUAU, M. URBAIN, JR. Obituary 386
Tight hair spots, composition of 96
Tropocollagen 88
denaturation 463
macromolecular effects of pepsin treatment 469
imide linkages 692
subunit model for 88
TUOMARLA, J. Biography 80

Unhairing
analysis of products by enzyme action 109
enzyme 109
hides and skins 143
oxidative 45
without lime 330
Upper leather, splitting 634
Upper materials in boots, evaluation 420

Vacuum drying 462
Vegetable-aluminum combination tannage with myrobalan 39
Vegetable-synthetic tannage, rationalization of 701
Vegetable-tanned leather for book bindings 506
Vegetable tanning
  influence of repeated application of re-used liquor 40
  mechanism 687
  reptile skins 196
  temperature effects 251, 693
Vegetable tanning extracts, trilonometric iron determination 262
Vegetable tanning material, willow bark 90
Vegetable tannins, optimum extraction time 640
Veins in box calf 313
VIOLA, S. J. Biography 121

Warble fly 90, 258
Waste waters, purification 634
Water vapor, absorption by leather 402
Wattle, compatibility with glutaraldehyde 223
West German Tanning School 396
WINDUS, W. Biography 556
Wool, "doggy," morphometry 696

YATES, J. R., Biography 726

Zirconium tannages for heavy leather 252